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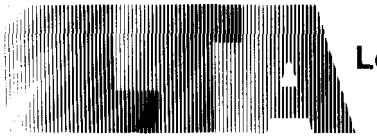

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March 16, 1993

Ms. Donna Searcy
Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: CC Docket No. 92-297, Proposal to Redesignate the 27.5-29.5 GHz Band for a new Local Multipoint Distribution Service

Dear Ms. Searcy:

Enclosed are an original and required copies of the comments of Loral Qualcomm Satellite Services, Inc., in the above-referenced proceeding.

If you have any questions concerning this matter, please contact the undersigned.

Sincerely yours,

Leslie A. Taylor

Leslie A. Taylor

Attachments

cc: Susan Magnotti, Domestic Facilities Division
Cecily Holiday, Esq., Chief, Satellite Radio Branch

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MAR 16 1993

FEDERAL COMMUNICATIONS COMMISSION
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matters of	)	
	)	
Rulemaking to Amend Part 1 and Part 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service	)	CC Docket No. 92-297
	)	RM-7872; RM-7722
	)	
	)	
	)	
Applications for Waiver of the Commission's Common Carrier Point-to-Point Microwave Radio Service Rules	)	
	)	
Suite 12 Petition for Pioneer's Preference	)	PP-22
	)	
University of Texas - Pan American Petition for Reconsideration of Pioneer's Preference Request Denial	)	

Comments of Loral Qualcomm Satellite Services, Inc.

Loral Qualcomm Satellite Services, Inc., ("LQSS"), by its attorneys, hereby respectfully submits its Comments in the above-captioned proceeding.

LQSS is an applicant for authority to construct a low-earth orbit satellite system in the 1610-1626.5 MHz and 2483.5-2500 MHz band for the provision of voice, data and position-determination service. LQSS proposes to use the 5/6 GHz band for feederlinks in its Globalstar system. Other low-earth orbit mobile satellite applicants have proposed the 20/30 GHz band for feederlinks. The issue of feederlinks for low-earth orbit mobile satellite systems may require a considerable amount of time for resolution and it is as yet unknown what feederlinks ultimately will be assigned for use by each mobile satellite system. Consequently, LQSS has an interest in the instant proceeding which proposes reallocation of the 27.9-29.5 GHz band from the point-to-point microwave service to a new local multipoint distribution service (LMDS).

I. The Commission Should Proceed Cautiously with Any Proposed Spectrum Allocation

In its Notice of Proposed Rulemaking, FCC 92-538, CC Docket No. 92-297, ("Notice"), the Commission proposes to reallocate 2,000 MHz of spectrum in the 27.5-29.5 GHz band from the point-to-point microwave service to a local multipoint distribution service (LMDS). The band 27.5-29.5 GHz currently is allocated to domestic fixed-satellite service and point-to-point microwave service, on a co-primary basis.

The Commission, in its "Notice," seeks comment on "whether a separate assignment is specifically required to accommodate the proposed satellite service applications in this band or whether adequate coordination and sharing criteria could be developed to permit both terrestrial and fixed satellite services to operate compatibly in the band."[1] The Commission goes on to observe:

> Normally the Fixed Satellite Service can share with point to point services in an area, as evidenced by the successful sharing of the 4/6 GHz band. However, the multicell multipoint configurations in this proposal envision a wide area distribution of services which may foreclose the possibility of acceptable sharing conditions between satellite and terrestrial services.[2]

Because of the potential incompatibility of the proposed new service with other services which have international co-primary allocations in the 27.5-29.5 GHz band, the Commission must proceed very cautiously with this proposed reallocation. A change of the current terrestrial use from point-to-point microwave to a widely dispersed, high-power broadcast delivery service such as LMDS, could result in a de facto loss of primary allocations to the domestic-fixed satellite service.

The potential loss of satellite allocation to the domestic-fixed satellite service would occur not only in the 27.5-29.5 GHz band, but in the companion space-to-Earth band of 17.7-19.7 GHz band.

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[1] Notice, para. 22.

[2] Supra. at para. 2.

The Commission should not rush to reallocate the terrestrial use of this band without very carefully considering the full consequences of its actions.

II. The 20/30 GHz Band Must be Available for Use by Satellite Systems

The 20/30 GHz band has long been viewed as the band of future satellite systems. That future is rapidly approaching, with 20/30 GHz systems already deployed in Japan and Western Europe and with a 20/30 GHz satellite system scheduled for deployment in the United States in the summer of 1993. Other satellite systems using the 20/30 GHz band have been licensed by the Commission or have applications pending.

One of the industrial sectors in which the United States continues to maintain world leadership is commercial space. The country's pre-eminence in the design, development and production of spacecraft, launch vehicles, earth stations, and continuous innovation in new communications services such as VSAT networks, satellite news-gathering, distance learning, videoconferencing and satellite business television must be maintained and supported. The mobile satellite/RDSS proceeding, of which LQSS is a part, demonstrates further the creative American spirit which is now focused on utilizing satellites, including non-geostationary systems, for mobile communications.[3]

[3] See, Notice of Proposed Rulemaking and Tentative Decision, Amendment of Section 2.106 of the Commission's Rules to Allocate the 1610-1626.5 MHz and the 2483.5-2500 MHz Bands for Use by the Mobile Satellite Service, including Non-geostationary Satellites, ET Docket No. 92-28, 7 FCC Rcd 6414 (1992) and Establishment of An Advisory Committee to Negotiate Proposed Regulations, CC Docket NO. 92-166, DA 92-1085, released August 7, 1992.

According to the 1993 U.S. Industrial Outlook, "the combined revenues from all aspects of the commercial space industries are expected to reach $4.9 billion," in 1993, and "The U.S. satellite manufacturing industry is expected to continue producing at a high level over the next five years...maintaining its 60 percent of the global market."[4]
In addition to large, geostationary satellites, the market for small, low-cost satellites, called lightsats and microsats, will continue to develop, according to the Outlook. Total revenues from satellite fixed and mobile services "are expected to reach $1.9 billion in 1993, an increase of about 20 percent over the $1.5 billion in 1992."[5]

Growth in the mobile satellite services market, according to the Outlook, "will depend on the allocation of adequate portions of the radio spectrum to accommodate multiple communications systems."[6]

Thus, the Commission should give significant weight to the important role in the U.S. economy of the space communications industry and satellite communications, particularly new satellite communications services expected to be implemented over the next decade, when considering any spectrum allocation or reallocation which could affect the ability of such systems to be deployed.

III. United States Satellite Systems Using the 20/30 GHz Band Will Be Deployed

The Commission, in its Notice, references certain proposed uses of the 20/30 GHz band by satellite systems.[7] The Commission's identification of authorized and proposed satellite use of the 20/30 GHz band should be supplemented by the following information.

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[4] U.S. Industrial Outlook, U.S. Department of Commerce, 1993, page 29-14.

[5] Id.

[6] Id.

[7] Notice, footnote 2.

First and foremost, the NASA Advanced Communications Technology Satellite (ACTS), will be launched in the summer of 1993, to provide an opportunity for experiments using the 20/30 GHz band for satellite communications. ACTS will operate in the 17.7-20.8 GHz (space-to-Earth) and 27.5-30.0 GHz (Earth-to-space) bands. The use of both of these bands for satellite services could be severely affected by terrestrial services which would create difficult or impossible sharing situations.

ACTS will be used by government and private sector experimenters to:

(1) Develop the high risk advanced communications technology required for future space systems;

(2) Promote effective utilization of the frequency spectrum and growth in communications capacity; and

(3) Insure continuous U.S. preeminence in the satellite communications industry.[8]

Among the technologies to be demonstrated by ACTS are baseband processing, reconfigurable multiple beam antennas, advanced receivers/transmitters and propagation compensation systems to mitigate the affects of rain in these higher frequency bands.

The ACTS program has received close to $1 billion funding from the United States taxpayer. In addition, numerous experimenters, both government and private sector, have invested millions of dollars in earth terminals and other equipment needed for the upcoming ACTS experiments. Experience gained through the ACTS program in using the 20/30 GHz band is likely to spur commercial interest in use of this band for satellite services.

With regard to commercial 20/30 GHz satellite operations, the Commission, in 1992, licensed Norris Satellite Communications, Inc., to construct two and launch and operate a domestic-fixed satellite using the 19.7-20.2 GHz and 29.5-30.0 GHz band.[9] Norris has pending a petition for reconsideration to extend its authority to the 19.5-19.7

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[8] ACTS Capability Brochure, NASA, 1990.

[9] Order and Authorization, 7 FCC Rcd 4289 (1992).

GHz and 29.3-29.5 GHz band, as requested in its initial application.[10] Norris Satellite also demonstrated its interest in innovative satellite services through its Petition for Rulemaking to create a General Satellite Service in the 19.7-20.2 GHz and 29.5-30.0 GHz band.[11] The Commission itself is proceeding with the upgrade of mobile satellite service to co-primary with fixed-satellite service in portions of these bands, consistent with the outcome of the 1992 World Administrative Radio Conference.[12]

In addition to ACTS and Norris, two applicants for low-earth orbit mobile satellite systems, Motorola Satellite Communications, Inc., and TRW Inc., have applied to use portions of the 20/30 GHz band for feederlinks.[13] Although the frequencies requested by Motorola and TRW are not encompassed by the 27.5-29.5 GHz band, the Commission must consider the possibility that other mobile satellite systems will seek to use feederlinks in the 20/30 GHz band. In fact, during the course of the Advisory Committee Proceedings developing technical rules for the mobile-satellite systems above 1 GHz, Celsat, a proponent of an integrated geostationary satellite and terrestrial mobile communications system, has stated its plans to use the 28.75-29.90 GHz and 19.85-20.10 GHz bands for feederlinks for its system. The Celsat proposal would be affected by the Commission's proposed reallocation.

In addition, during the deliberations of the MSS below 1 GHz Advisory Committee,

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[10] See, Petition for Reconsideration of Norris Satellite Communications, Inc., filed August 7, 1992. See also, Application File Nos. 54-DSS-P/L-90 and 55-DSS-P-90.

[11] See, Petition for Rulemaking to Create a General Satellite Service, RM-7511, filed July 16, 1990.

[12] See, Notice of Proposed Rulemaking regarding the Upgrade to Primary Status the Secondary Mobile-Satellite Service Allocation at 19.7-20.2 and 29.5-30.0 GHz, ET Docket No. 92-191, FCC 92-370, released September 4, 1991.

[13] See, Application of Motorola Satellite Communications, Inc., File Nos. 9-DSS-P-91(87) and CSS-91-010, and Application of TRW Inc., File Nos. 20-DSS-P-91(12) and CSS-91-015.

various analyses and presentations have suggested that separate frequency allocations may be required for feederlinks for non-geostationary mobile satellite systems, to avoid the possibility of interference from non-geostationary satellites to geostationary satellites operating in the same frequency band.[14]

Technical analysis underway at the Department of Communications in Canada also suggests that it may be advisable to provide separate allocations for feederlinks for non-geostationary mobile satellite systems to avoid interference into geostationary satellites. A paper on this subject identifies the 18.82-18.92 GHz and 28.62-28.72 GHz bands as candidates for use for such feederlinks.[15]

The Commission is likely to receive additional satellite applications for use of the 20/30 GHz band in the near future.[16]

In summary, the Commission should take into consideration the impending ACTS experiments as well as the increasing number of commercial systems which will be using the 20/30 GHz band, including portions of the 27.5-29.5 GHz and 17.7-19.7 GHz bands, in evaluating the potential impact of reallocating the terrestrial use of the 27.5-29.5 GHz band to a new LMDS.

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[14] See, Documents IWG 3-20 and IWG 3-21, from the MSS above 1 GHz Advisory Committee.

[15] See, "The Provision of Spectrum for Feederlinks of Non-geostationary Mobile Satellites," Robert R. Bowen, Canadian Department of Communications, for Presentation to the 3rd International Mobile Satellite Conference in June, 1993.

[16] See, "Calling Communications Corp. Plans Global Ka-band LEO System," Satellite News, February 1, 1993.

IV. The Commission Must Consider the International Implications of Its Proposed Reallocation

The Commission, in determining whether it can proceed with reallocating the 27.5-29.5 GHz band for LMDS also must consider the impact of such an action on the United States neighbors Canada and Mexico. Canada is proceeding with plans to utilize the 20/30 GHz band on future Canadian domestic satellites. Such domestic satellites may even include domestic beams as are currently permitted on an ANIK satellite operated by Telesat Canada. Mexico, as well, is considering using the 20/30 GHz band in future satellites.

Even assuming future Canadian and Mexican satellites are restricted to domestic coverage, coordinations in border areas (which includes most of the populated area of Canada) between satellite services and proposed LMDS operations in the United States could prove extremely complex.

The Commission is well aware of the need to closely coordinate with Canada and Mexico on any matters affecting satellite communications allocations and use of those allocations. The Commission has worked closely over the past 20 years with those countries to develop a relationship of trust and comity which has enabled the implementation of many publicly beneficial satellite communications policies such as open entry and reduced orbital spacing. These relationships could be severely impacted by the Commission's proposed reallocation.

The Commission notes that no commenters on the Suite 12 Petition discussed existing or proposed satellite use of the band.[17] In examining the timetable of the proceeding, LQSS offers the observation that many satellite entities, as well as NASA, were deeply involved in the process of preparing for and attending the 1992 World Administrative Radio Conference (WARC-92), which addressed many allocation matters relating to satellite communications, including the 20/30 GHz band.[18] Suite 12's Petition

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[17] Notice, para. 22.

[18] See, Inquiry Relating to Preparation for the International Telecommunications Union World Administrative Radio Conference for Dealing with Frequency Allocations in certain Parts of the Spectrum, Gen. Docket No. 89-554, Notice of Inquiry, 4 FCC Rcd 8546

was filed in September, 1991, when LQSS, as well as most of the satellite community, were deeply involved in preparations for the conference. Thus, the Commission can draw no inferences of lack of interest or acquiescence on the part of the satellite communications industry with regard to Suite 12's reallocation proposal. By contrast, Suite 12 made no effort to participate in the WARC preparatory process or to bring its sweeping proposal to reallocate 2,000 MHz to the attention of the international spectrum community.

Based on the vital need to consider the international implications of any proposed reallocation matter, particularly one involving satellite communications, LQSS urges the Commission to reconsider its proposal, and to defer any final action until the proceeding concerning allocation of spectrum for low-earth orbit mobile satellite systems is concluded so that any decisions concerning feederlinks for these systems may be taken into consideration in evaluating the proposed reallocation of the terrestrial portion of the 27.5-29.5 GHz band.[19]

V. The Technical Implications of Sharing the 27.5-29.5 GHz Band by Satellite Communications and the Proposed LMDS Require Further Study

LQSS urges the Commission to defer action in this proceeding until more specific information can be developed regarding the interference interactions between satellite operations, including possible feederlinks operating in the Earth-to-space direction, with the proposed LMDS. As the Commission is aware, the applicants for mobile-satellite service in the 1610-1626.5 MHz and 2483.5-2500 MHz bands, including LQSS, are engaged in intensive proceedings concerning allocation of those bands and the processing of system

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(1989); Second Notice of Inquiry, 5 FCC Rcd 6046 (1990); Supplemental Notice of Inquiry, 6 FCC Rcd 1914 (1991) and Final Report, 6 FCC Rcd 3900 (1991).

[19] LQSS, as well as other applicants for mobile-satellite systems to operate in the 1610-1626.5 MHz to 2483.5-2500 MHz bands, filed applications on June 3, 1991. Motorola and Ellipsat filed their applications in the fall of 1990. Suite 12 filed its Petition for Rulemaking concerning the 27.5-29.5 GHz band on September 24, 1991. Orderly decision-making on key spectrum allocation questions surely justifies any slight deferral of action in the instant proceeding that might be occasioned by following this approach.

applications, including that of LQSS. This follows the significant efforts on the part of these applicants, working with the United States government, to obtain an international allocation for mobile-satellite service in these bands at WARC-92.

The Commission, in the context of the instant rulemaking, must carefully consider the impact of reallocating 2,000 GHz of spectrum to a new terrestrial service, including the impact on coordinating LMDS stations with satellite operations.

VI. Conclusion

Based on the foregoing, LQSS requests that the Commission not proceed with its proposed reallocation of the 27.5-29.5 GHz band from point-to-point microwave service until it fully evaluates the impact of such a reallocation on the users of the fixed-satellite allocation as well as consequences of such a reallocation on the United States telecommunications relationship with Canada and Mexico. In addition, the Commission should defer action on any reallocation involving the 27.5-29.5 GHz band until it has allocated spectrum and identified suitable feederlinks for use by the mobile-satellite/RDSS system applicants, including LQSS.

Respectfully submitted,

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